

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL F. DUNN
and RANDALL C. BAUCK

Appeal No. 95-2439
Application 08/080,353¹

ON BRIEF

Before KRASS, JERRY SMITH, and FLEMING, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 5 and 9 through 12. Claim 13 has been determined by the examiner to contain allowable subject matter and is not before us on appeal.

¹ Application for patent filed June 21, 1993.

The invention pertains to a recording system which is adaptable to multiple supply voltages and capable of dynamically adjusting the performance of the system in response to variations in the operating power supply voltage.

Representative independent claim 1 is reproduced as follows:

1. A recording system comprising:

a disk drive for operation from a supply potential;

a reset circuit coupled to receive an input voltage and a reference potential, said reset circuit for comparing said input voltage against said reference potential and for generating a reset signal disabling said disk drive whenever said input voltage is less than said reference potential;

an adapter circuit including means for configuring said disk drive in first and third modes of operation compatible with a first predetermined operating voltage, and second and fourth modes of operation compatible with a second predetermined operating voltage, said first predetermined voltage being larger than said second predetermined voltage, said adapter circuit generating said input voltage as a function of said supply potential;

a logic device coupled to said adapter circuit for selecting a first set of seek parameters utilized by said disk drive in response to said first mode of operation and for selecting a second set of seek parameters utilized by said disk drive in response to said second mode of operation, said logic device monitoring said supply potential when said disk drive is configured in said third and fourth modes of operation such that when said supply potential drops from said first predetermined operating voltage and said disk drive is configured in said third mode of operation said logic device selects said second set of seek parameters and outputs a control signal to said adapter circuit to adapt said input voltage compatible with said second predetermined operation voltage; and

when said supply potential rises from said second predetermined operating voltage and said disk drive is configured in said fourth mode of operation, said logic device selects said first set of seek parameters and outputs said control signal to said adapter circuit to adapt said input voltage compatible with said first predetermined operating voltage.

The examiner relies on the following references:

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|-------------------------------|-----------|---------------|
| Morimoto et al. (Morimoto) | 4,636,905 | Jan. 13, 1987 |
| Osafune | 4,931,889 | Jun. 5, 1990 |

Claims 1 through 5 and 9 through 12 stand rejected under 35 U.S.C. ' 103 as unpatentable over Osafune and Morimoto.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

OPINION

We affirm.

While we understand the disclosed invention to differ from that of the applied references, individually or in combination, it is our view that the claimed subject matter is broad enough to be unpatentable over the combined references.

At the outset, we note that, in accordance with appellants' statement at page 5 of the brief, all claims stand together. Accordingly, we will consider only representative independent claim 1.

The examiner takes the position that Osafune discloses first and second modes optimizing a seek circuit in a

recording/reproducing apparatus wherein a switch selects one of a battery and a commercial power source. As the examiner recognizes, Osafune fails to disclose the claimed third and fourth modes wherein the power supply is monitored to detect a voltage drop (or voltage increase). Therefore, the examiner relies on Morimoto. While the examiner's explanation of Morimoto's disclosure, from the bottom of page 3 to the top of page 4 of the answer, is less than elucidating, Morimoto does disclose monitoring to detect voltage drops and increases and adapting to these drops and increases by prohibiting or permitting certain functions such as read/write. The examiner concludes that it would have been obvious to provide Osafune with the adaptive modes of Morimoto in order to switch to the appropriate voltage level necessary for optimal performance and that it would have been obvious to maintain the first and second modes of Osafune as being nonadaptive since the omission of an element and its function, where the remaining elements perform the same function as before, involves only routine skill in the art.

A prima facie case for the obviousness of the subject matter of claim 1 appears to have been made, with the examiner setting forth the deficiencies of the individual references and the motivating factors for combining the teachings of the

references in a manner to overcome the individual deficiencies and to arrive at the claimed subject matter.

Appellants make several arguments against the examiner's position.

We agree with appellants, at page 6 of the brief, when they contend that Osafune teaches a conventional disk drive system which is preset to one of two power modes of operation and that Osafune does not disclose monitoring the power supply voltage to detect voltage drops nor does the reference disclose adapting the drive's reset and seek parameters responsive to the changing voltage levels.

We also agree with appellants, at pages 6-7 of the brief, that Morimoto relates to a voltage monitoring system which monitors the voltage of the power source at two levels and that the system stops the supply of current to the write and erase circuits when the power supply drops below an upper level so that whenever the power supply drops below the upper level but remains above a lower voltage level, the drive is used to perform read operations only.

However, appellants argue [brief, page 7] that the prior art does not suggest "adjusting the reset and seek parameters of the disk drive dynamically in accordance with variations in power supply potential and a selected mode of operation" but

that the instant invention "features 5 VOLT ADAPTIVE and the 3 VOLT ADAPTIVE modes of operation wherein the current operating supply potential is monitored and the drive's reset and seek parameters are adjusted dynamically to optimize the performance of the disk drive."

While the arguments might have some merit with regard to the instant disclosed invention, the subject matter of independent claim 1 reveals nothing about a "5 VOLT ADAPTIVE" and a "3 VOLT ADAPTIVE" mode nor does it reveal anything about "dynamically" adjusting reset and seek parameters.

If appellants are suggesting that the applied references are silent with regard to suggesting adjusting reset and seek parameters at all, we disagree. While the disk drives of the prior art clearly adjust reset and seek parameters, as broadly claimed, the teaching by Morimoto of stopping write and erase circuits at one level and permitting only read operations until a lower voltage level is reached would appear to be a fair teaching of a logic device for monitoring supply potential in third and fourth modes of operation so that when the potential drops from a first operating voltage (the upper level voltage in Morimoto) and the disk drive is in the third mode of operation (write and erase circuits inoperable in Morimoto), the logic device selects the second set of seek

parameters (i.e., don't seek to write any data) and outputs a control signal to adapt the input voltage compatible with the second predetermined operating voltage (i.e., below the upper limit voltage in Morimoto, the write and erase circuits are controlled so as to be inoperable).

Further, when the supply voltage rises from the second predetermined operating voltage (i.e., from below the upper level voltage, rising to the upper level voltage in Morimoto) and the disk drive is configured in a fourth mode of operation (i.e., write and erase circuits operable, along with the read function, in Morimoto), the logic device selects the first set of seek parameters (i.e., write to the chosen location in Morimoto) and outputs a control signal to adapt the input voltage compatible with the first predetermined operating voltage (i.e., the voltage is at the upper level voltage in Morimoto).

Appellants argue, at page 7 of the brief, that their invention affords "great flexibility" because of the "fixed and adaptive modes." But, as explained by the examiner, such a combination of modes is attained by the combination of Osafune (fixed modes) and Morimoto (adaptive modes, as broadly claimed).

We further disagree with appellants that there is no motivation, from the prior art, "to adjust the drive's reset and seek parameters in response to the current available power supplied to the disk drive unit" [brief, top of page 8]. While the applied references may not teach the adjustment disclosed and intended by appellants, as was pointed out supra, the adjustment, as broadly claimed, is believed to have been suggested by Morimoto.

Since we have responded to all of appellants' arguments and the arguments do not convince us of any error in the examiner's rejection of the claimed subject matter set forth in independent claim 1, we will sustain the examiner's rejection of claims 1 through 5 and 9 through 12 under 35 U.S.C. ' 103.

The examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR ' 1.136 (a).

AFFIRMED

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| Errol A. Krass |) | |
| Administrative Patent Judge |) | |
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| Jerry Smith |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
| |) | INTERFERENCES |
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